SOME PORTO RICAN PARASITIC FUNGI

PHILIP GARMAN

(WITH PLATE 171, CONTAINING 7 FIGURES)

The following descriptions and notes have been made upon Porto Rican fungi collected by Dr. F. L. Stevens during the years 1912 and 1913. A description of the material contained in this collection has already been given in a paper by Miss Esther Young.[1] The types and cotypes of new species have also been distributed as set forth in that article.

Thanks are due to Dr. F. L. Stevens for his many helpful suggestions, without which the work would not have been possible. The species of hosts, with few exceptions, have been determined by Dr. N. L. Britton and Mr. Percy Wilson, of the New York Botanical Garden, and to them also I wish to express my thanks.

SEPTORIA Fries

1. **Septoria Petitiae** sp. nov.

Spots 1–2 mm. in diameter, suborbicular, with a white center and a brownish or fuscous margin; perithecia about 0.1 mm. in diameter, black, two or three to a spot; spores slightly curved, hyaline, 2-guttulate, 16–46 × 1.2 μ. (*Pl. 171, f. 1.*)

On leaves of *Petitia domingensis* Jacq. in Porto Rico: Cabo Rojo, *6470* (type), *9756*.

2. **Septoria Miconiae** sp. nov.

Spots about 1.2 mm. in diameter, circular, with a white center and a brown and distinctly elevated margin; perithecia 50 μ in diameter, black, immersed; ostiole 24–48 μ in diameter; spores three- to many-guttulate, usually curved and hyaline, 19–26 × 2 μ. (*Pl. 171, f. 2.*)

On leaves of *Miconia laevigata* DC. in Porto Rico: Las Marias, *117, 357* (type), *369*.

[1] MYCOLOGIA, 7: 143–150. 1915.

3. **Septoria Guettardae** sp. nov.

Spots large, 4–5 mm. or more in diameter; margin irregular and dark-red, the center of the spot becoming white and contrasting strongly with the remainder of the leaf; perithecia black, 50 μ in diameter; ostiole about 24 μ in diameter; spores curved, hyaline, many-guttulate, 28–38 × 2.4 μ. (*Pl. 171, f. 3.*)

On leaves of *Guettarda ovalifolia* Urb. in Porto Rico: Monte Alegrillo, *9759* (type).

4. **Septoria Lantanae** sp. nov.

Spots varying from 1–2 mm. in diameter, somewhat irregular in outline, sooty; perithecia 76–96 μ in diameter; ostiole indefinite, about 40–60 μ in diameter; spores long, slightly curved or straight, several-septate, 24–50 × 2.4 μ. (*Pl. 171, f. 4.*)

On leaves of *Lantana camara* L. in Porto Rico: *221x* (type).

This species differs decidedly from *S. Verbenae* in the character of the leaf spot which lacks the white center.

5. **Septoria Pityrogrammae** sp. nov.

Spots brown, indefinite; perithecia 96 μ in diameter, black; ostiole 20–30 μ in diameter; spores long and thread-like, 3–4-spetate, sometimes apparently continuous, hyaline, curved and acute at both ends, 40–60 × 2.4 μ.

On leaves of *Pityrogramma calomelanos* L. Indiera Frios, Maricao, *3484* (type).

This species is near *S. aquilina* Passer, from which it differs mainly in spore characters, the spores of this species being distinctly curved, acute at both ends and only one-half the diameter of the species *S. aquilina* on *Pteris*.

6. SEPTORIA ASIATICA Speg. Fungi Chilenses 168. 1910

On leaves of *Centella asiatica* Urb. in Porto Rico: Vega Baja, Santurca San Sebastian, *265, 4231, 5207*.

7. SEPTORIA CHELIDONII Desm. Ann. Sci. Nat. II. **17**: 110. 1842

On leaves of *Argemone mexicana* L. in Porto Rico: Guayama, *5398*.

In the following descriptions of the genera related to *Dimerosporium* and originally included under this head by Saccardo, the work of Thiessen[2] has been followed rather closely. Several species commonly known as *Parodiella* seem to fall within the limits of this classification, and have been moved to what appears to be a more natural position within the "Dimerineae."

DIMERIUM Sacc. & Syd.

1. **Dimerium Cayaponiae** sp. nov.

Spots black, sooty, epiphyllous and irregular in outline, never more than 3 mm. in diameter; perithecia black, globose, 0.12 mm. in diameter; asci linear-clavate, eight-spored, 33.6–36 × 2.4 μ; spores two-celled, dark, smoky, one cell considerably smaller than the other, 7.3–9.6 × 3.6–5 μ. (*Pl. 171, f. 5.*)

On leaves of *Cayaponia americana* (Lam.) Cogn. in Porto Rico: Utuado, *4360* (type).

The dark, black spot is characteristic of the species. This is formed partly of discolored host tissue and partly of a dense compact fungous mycelium.

2. **Dimerium grammodes** (Kuntze) comb. nov.

Dothidea perisporioides Berk. & Curt. Grevillea **4**: 103. 1876.
Sphaeria perisporioides Berk. & Curt. Grevillea **4**: 102, 107. 1876.
Dothidella grammodes Sacc. Syll. Fung. **2**: 634. 1883.
Dothidea grammodes Berk. Jour. Linn. Soc. **10**: 341. 1869.
Dothidea seminata Berk. & Rav. Grevillea **4**: 104. 1876.

On leaves of *Crotalaria retusa* L., *Phaseolus lunatus* L., *Meibomia adscendens* O. Kuntze, and an undetermined legume belonging to the Papilionaceae, in Porto Rico: Maunabo. Papilionaceae, *2452;* Utuado, *4418;* Aguadilla, *Phaseolus lunatus, 5027;* Guayama, Cabo Rojo, *Crotalaria retusa, 5333, 6480;* Rio Piedras, *Meibomia adscendens, 5723.*

This pretty and widespread species occurs, as can be seen from the above, on a variety of leguminous hosts in Porto Rico. It does not differ essentially from the descriptions of the species from other parts of the world. The specific name *grammodes*

[2] Zur Revision der Gattung Dimerosporium. Botanische Centralblatt **29**: pt. 2; 45–73. 1912.

has been used recently by Rehm; *perisporioides* being the most frequently used up to that time. The original works of Kuntze, containing descriptions or exsiccati have not been available, and the change is herewith accepted solely upon the authority of Rehm. The fungus is placed in *Dimerium* because it offers no striking differences from other members of that genus.

3. **Dimerium melioloides** (Berk. & Curt.) comb. nov.

Parodiella melioloides Winter, Hedwigia **24**: 257. 1885.
Dimerosporium lateritium Speg. Fungi Puiggariani Pug. **1**: 110. 1889.

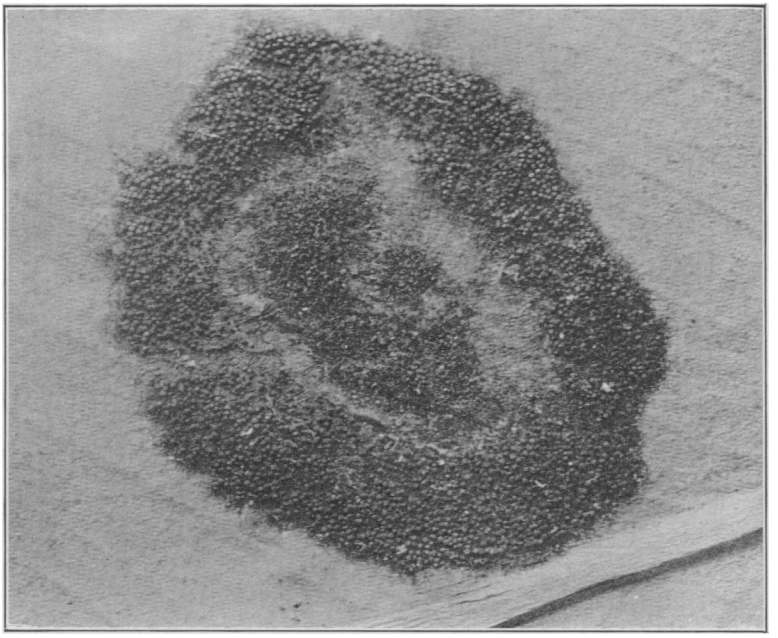


FIG. 1. *Dimerium melioloides,* showing concentric arrangement of perithecia.

Sphaeria melioloides Berk. & Curt. Jour. Linn. Soc. **10**: 387. 1869.
Rosellinia melioloides Sacc. Syll. Fung. **1**: 276. 1882.
Nectria megalospora Sacc. & Berl. Rev. Myc. **7**: 157. 1885.

On leaves of *Clusia rosea* Jacq. in Porto Rico: Maricao *285a, 816, 946, 3615.*

The species is referred to the genus *Dimerium* and differs from the usual form occurring in *D. grammodes* in the possession of a compact, radiate mycelium on the surface of the leaf. The species *D. melioloides* has been placed in the genus *Parodiella* by Rabenhorst and Winter, and distributed in their exsiccati under that name, but there is some uncertainty as to its real position as shown by the location originally given it by Saccardo.[3] The majority of the material at hand possesses spores that are only feebly colored, together with a few dark spores, but the large amount of material examined would seem to indicate that the dark spores occur only occasionally.

4. **Dimerium Stevensii** sp. nov.

Spots irregular in outline, one to several mm. in diameter; perithecia sperical, black, shining, 100 μ in diameter; asci clavate, 42–50 $\times$ 20–22 μ; spores slightly greenish-hyaline, sometimes dark, two-celled, 16–20 $\times$ 6–8 μ; paraphases abundant.

On leaves of *Cordia corymbosa* (L.) G. Don. Quebradillos, "College Grounds," Mayaguez, *934* (type); Maricao *4816*.

DIMERINA Thiessen

1. **Dimerina Jacquiniae** sp. nov.

Spots small, 0.25 μ in diameter, composed of a number of black, spherical perithecia, usually about 10; mycelium scant, loose, slightly reddish; perithecia black, 48–60 μ in diameter; asci hyaline, ovate, 26.4 $\times$ 12 μ; spores slender and hyaline, 14.4–17 $\times$ 3.6 μ.

On leaves of *Jacquinia barbasco* (Loefl.) Mez. Mona Island, *6087* (type).

PHYLLACHORA Nitschke

1. PHYLLACHORA PERIBEBUYENIS Speg. Rev. Myc. 9: 95. 1887

On leaves of the Melastomataceae, especially *Miconia prasina* DC., *M. laevigata* DC., *M. Sintensii* Cogn., *Heterotrichum cymosum* Urb., and a species of *Tetrazygia:* in Porto Rico: Maricao, Consumo, Las Marias, *166, 741, 840, 1355a, 4708; Miconia laevi-*

[3] Saccardo: Sylloge Fungorum 1: 276.

gata: Villa Alba, Maricao, Rosario, *84, 162, 163, 171, 742a, 4813; Miconia* sp., Monte Alegrillo, *1355; Miconia Sintensii,* St. Ana, *6656; Tetrazygia* sp., Jayuga, *500; Heterotrichum cymosum,* Indiera Fria (Maricao), Manati, Ponce, Utuado, Maricao, Quebradillas, San Sebastian, Luquillo Forest, Jajome Alto, Giganta near Adjunta, Prestons Ranch, Dos Bocas, *3372, 4326, 4374, 4380a, 4391, 4392, 4705, 4984, 5206, 5595, 5652, 5941, 6779, 6859;* on various Melastomataceae.

This exceedingly common species in Porto Rico is undoubtedly Spegazzini's *P. peribebuyensis,* as shown by a comparison with exsiccati of Roumeguere (Fungi Gallici Exsiccati *3234*). Its systematic position becomes doubtful, however, when we examine the character of the stroma and its attachment to the leaf. No species of *Phyllachora* have been described which possess the central stroma attachment (see *fig. 7*) that this species possesses, and the more common species of *Phyllachora* such as *P. graminis* differ so much from this type both in the shape and relative position of the stroma that it would seem advisable to make this and other species of the same nature into a new genus. In Saccardo's description of *peribebuyensis,* he questions the true position of the fungus and states that it is closely related to, though different from, *Bagnisiella,* a closely allied form. His generic description also contains the statement that many forms have been collected under the genus name *Phyllachora,* which properly belong elsewhere. In keying the species out through the analytical tables offered by Saccardo and Lindau in Engler and Prantl, the species falls into *Bagnisiella* and seems to be totally excluded from *Phyllachora* by the nature of the stroma. Saccardo, however, states that *peribebuyensis* is different from anything in *Bagnisiella,* and judging from descriptions and figures of *Bagnisiella,* this is correct. Considering the character of the stroma alone, then, the erection of a new genus would seem to be necessary. Recent authors are, on the other hand, inclined to disregard stromal characteristics and to found classifications on more fundamental bases. The species has, therefore, been left in its original position because it is not different in other respects from typical species of *Phyllachora.*

2. Phyllachora nitens sp. nov.

Stroma forming a large black shining spot, often covering an area as much as 1 cm. in diameter; asci clavate, eight-spored, 100–110 × 12–16 μ; spores mostly ovate, somewhat acute at one end, hyaline and slightly granular; 6–8 × 10–12 μ; paraphases present.

On leaves of *Schlegelia brachyantha* Guseb.; in Porto Rico: Maricao, *873* (type), *857;* Ponce, *4352;* Monte Alegrillo, *4501;* Rio Grande, *4502;* Prestons Ranch, *6776.*

3. PHYLLACHORA RENALMIAE Rehm, Hedwigia **36**: 373. 1897

On leaves of *Alpinia antillarum* R. & S., in Porto Rico: Maricao, Monte Alegrillo, *805, 2344.*

The following collections possess the typical stroma but lack asci and ascospores: Maricao, *192, 705;* Rio Maricao, *3606;* Utuado, *4385a;* Jajome Alto, *5654;* Yunque, *2385;* Monte Alegrillo, *4749.*

4. PHYLLACHORA SPHAEROSPERMA Winter, Hedwigia **23**: 170. 1884

On leaves of *Cenchrus echinatus* L. and *C. myosuroides* H.B.K.

Vega Baja, *1730, C. echinatus;* Mona Islands, *6330, C, myosuroides.*

5. PHYLLACHORA GRAMINIS (Pers.) Fuckel, Symb. Myc. 218. 1869

On leaves of *Panicum, Andropogon brevifolius* L., *Lasiacis Swartziana* Hetche, and a species of *Paspalum,* in Porto Rico: Luquillo Forest, *4527, Panicum;* Maricao, *168,* Rio Piedras, *5751, Andropogon brevifolius* L.; Jajome Alto, *5657, Lasiacus Swartziana* Hetche; Sabana Grande, *317, Paspalum.*

6. PHYLLACHORA ANDROPOGONIS (Schw.) Karst. & Har. Rev. Myc. **12**: 172. 1890

On leaves of *Paspalum Underwoodii* Nash, in Porto Rico: Prestons Ranch, *6763.*

The species differs from *P. graminis* in spore size, which

character seems to be fairly constant. In *P. graminis,* however, there is some variation and it would seem as though the species described under that name would also include the variety *"tupi"* of Spegazzini. The divergence in this case from the typical *P. graminis* is sufficient, I think, to warrant the maintainance of the species name *Andropogonis.*

7. PHYLLACHORA PERFORANS (Rehm) Sacc. & Syd. Hedwigia **39**: *232, fig. 4.* 1900

P. paulensis Rehm, Ascom. Exc. 1747. 1907, Ann. Myc. 471. 1907.

P. dalbergiicola Henn. var. *perforans.* Rehm, Hedwigia **1906**: *232. fig. 4.*

On leaves of *Abrus precatorius* L. in Porto Rico: Mayagüez, *313, 1196.*

AUERSWALDIA Sacc.

AUERSWALDIA PALMICOLA Speg. Fungi. Guar. Pug. **1**: 121. 1883.

On leaves and petioles of *Ascrista monticola* Cook. Adjuntas, El Gigante, *6065.*

This fungus agrees in all features with the description given by Saccardo. In the specimens at hand, very little coloration occurs in the spores. Comparisons with exsiccati (Roum. Fungi Gall. *4067*), however, show that the form is without doubt *Auerswaldia.*

UNIVERSITY OF ILLINOIS,
URBANA, ILL.

EXPLANATION OF PLATE CLXXI

Fig. 1. *Septoria Peititiae* sp. nov. a. Leaf, showing spots. × ½. *b.* Spot, slightly enlarged, showing pycnidia. *c.* Spores × 200.

Fig. 2. *Septoria Miconiae* sp. nov. *a.* Leaf, showing spots. × ½. *b.* Spot enlarged about 12 diameters. *c.* Spores × 480.

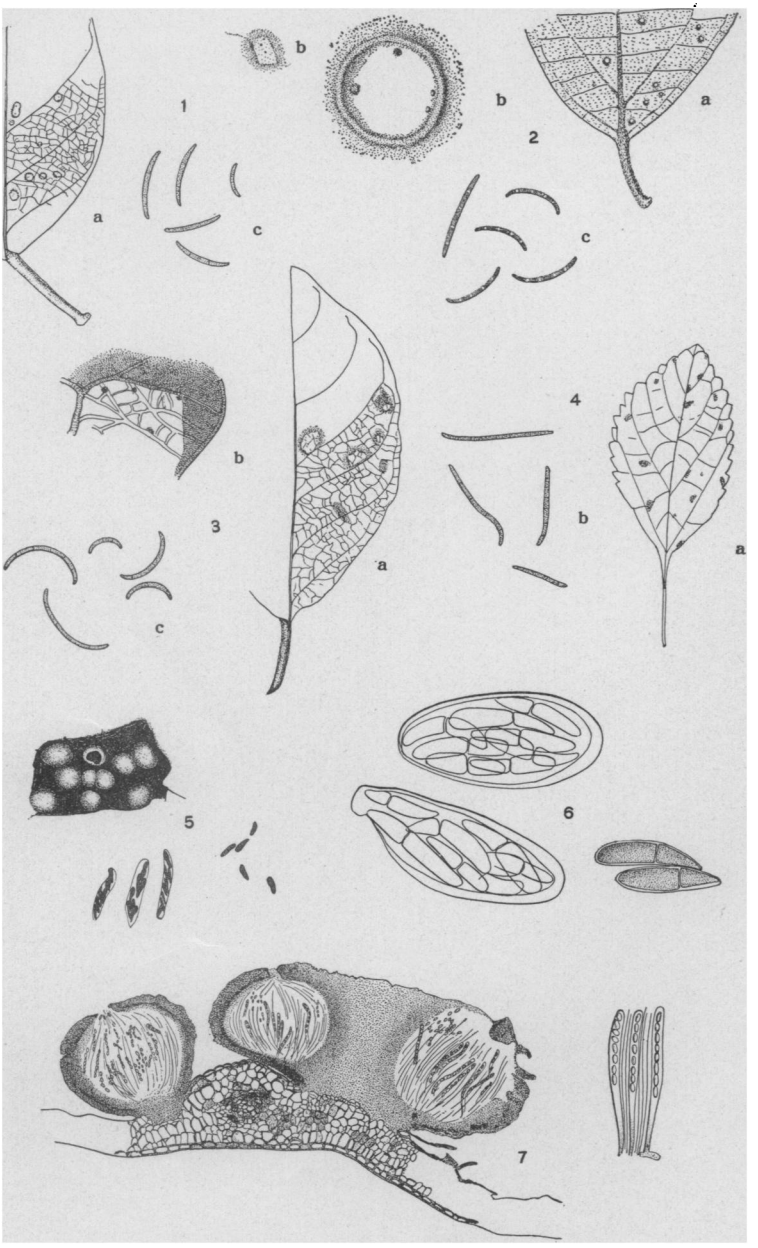
Fig. 3. *Septoria Guettardae* sp. nov. *a.* Leaf with spots. × ½. *b.* Spot, enlarged. *c.* Spores × 275.

Fig. 4. *Septoria Lantanae* sp. nov. *a.* Leaf with spots. × ½. *b.* Spores × 500.

Fig. 5. *Dimerium Cayaponiae* sp. nov., showing pycnidia, asci and ascospores, much enlarged.

Fig. 6. *Dimerium melioloides,* asci and spores, enlarged.

Fig. 7. *Phyllachora peribebuyensis,* cross section of stroma (left) and group of asci, all much enlarged.



SOME PORTO RICAN PARASITIC FUNGI